

LISTING OF CLAIMS

No new claim amendments are proposed. This listing reflects entry of earlier proposed amendments and will replace all prior versions of claims in the application.

Claim 1. (previously presented) Combination of at least one building material and a bath fluid for a method for directly printing elements and models wherein the building material contains at least one low-viscosity monomeric or oligomeric compound having a viscosity < 200 mPa·s, which polymerises in contact with the bath fluid by the polymerisation of at least one component, and

the bath fluid consists of an aqueous solution containing an initiator, which initiates the polymerisation of at least one ingredient of the building material, wherein the building material contains a cyanoacrylate represented by the general formula $\text{CH}_2=\text{C}(\text{CN})\text{COOR}$, a mixture of cyanoacrylates or a mixture of one or more cyanoacrylate(s) with additional anionically polymerisable compounds, wherein the residue R comprises linear or branched, monosubstituted, polysubstituted or unsubstituted, aliphatic, cycloaliphatic or olefinic groups having 1 to 10 carbon atoms, monosubstituted, polysubstituted or unsubstituted aromatic groups having 6 to 18 carbon atoms and saturated, unsaturated and aromatic, 3- to 7-membered heterocyclic groups having one or more heteroatom(s) independently selected from N, S, O and P, which may be substituted by one or more substituents(s) selected from halogen (F, Cl, Br, I), hydroxyl, oxo, cyano, C_{1-8} -alkoxy, amino, mono or di(C_{1-8})alkylamino, nitro, thiol and $-\text{S}(\text{O})\text{n}(\text{C}_{1-8})\text{-alkyl}$ ($\text{n}=0, 1, 2$) and the bath fluid is a basic aqueous solution.

Claim 2. (original) Combination according to claim 1, wherein the

building material and/or the bath fluid contains further additives.

Claim 3. (previously presented) Combination according to claim 1, wherein the cyanoacrylate is methyl cyanoacrylate, ethyl cyanoacrylate, butyl cyanoacrylate or 2-methoxyethyl cyanoacrylate or a combination thereof.

Claim 4. (previously presented) Combination according to claim 1, wherein the additional anionically polymerisable compounds are selected from the group comprising cyclic esters, cyclic anhydrides and epoxides.

Claim 5. (original) Combination according to claim 4, wherein the cyclic ester is 3,6-dimethyl-1,4-dioxane-2,5-dione, the cyclic anhydride is maleic anhydride and the epoxide is glycidyl methacrylate or butanediol diglycidyl ether.

Claim 6. (previously presented) Combination according to claim 1, wherein the basic aqueous solution is selected from the group of aqueous alkaline or alkaline earth metal hydroxide solutions or alkaline metal phosphate solutions, the group of aqueous amine solutions or the group of basic buffer solutions.

Claim 7. (previously presented) Combination according to claim 6, wherein the basic aqueous solution is selected from the group consisting of sodium hydroxide solutions (0.05 to 5%), sodium carbonate solutions (5 to 10%), aqueous solutions of lysine, guanidinium salts and phenyl glycine and phosphate buffer solutions.

Claim 8. (previously presented) Combination according to claim 1, wherein the building material contains an acidic stabilizer or a stabilizer leading to an acidic compound, when contacted with water.

Claim 9. (original) Combination according to claim 8, wherein the stabilizer is selected from the group comprising sulfonic acids, carboxylic acids, organic phosphonic acids, sulfur dioxide and hydrogen chloride.

Claim 10. (original) Combination according to claim 9, wherein the stabilizer is methane sulfonic acid, ethane sulfonic acid, toluene sulfonic acid, formic acid or vinyl phosphonic acid.

Claim 11. (previously presented) Combination according to claim 1, wherein the additives in the building material are selected from the group comprising surface-active compounds such as the sodium salt of lauryl sulfonic acid, dodecyl dimethyl (3-sulfopropyl)ammonium hydroxide and perfluorinated aliphatic polyesters.

Claim 12. (previously presented) Combination according to claim 1, wherein the additives in the bath are selected from the group comprising compounds for adjusting the viscosity and the polarity such as ethylene glycol, glycerine, poly(ethyleneglycol), poly(propylene glycol), poly(ethylene glycol-co-propylene glycol), poly(hydroxyethyl acrylate), poly(ethylene imine), polysaccharides such as starch, sugar derivatives, polypeptides such a gelatine, compounds for adjusting the surface tension, the density, the ionic strength and the pH such as amino acids, salts such as sodium chloride, calcium chloride, surface-active substances such as the sodium salts of lauryl sulfonic acid, esters of the sodium salt of sulfosuccinic acid, acrylic acid and poly(acrylic acid).

Claim 13. (previously presented) Combination according to claim 1, wherein the building material or the bath fluid contains additional substances to improve the mechanical properties of the polymers obtained.

Claim 14. (original) Combination according to claim 13, wherein the building material contains at least one low-viscosity multifunctional compound having a viscosity < 200 mPa·s as a crosslinking agent and the bath fluid contains oligomeric or polymeric compounds forming a branched-chain or crosslinked polymer by reacting with the building material.

Claim 15. (previously presented) Combination according to claim 1, wherein the building material or the bath fluid contains biochemically active substances to influence the properties of the polymers obtained.

Claim 16. (previously presented) Combination according to claim 13, wherein these substances also polymerize at least partially.

Claim 17. (original) Combination according to claim 16, wherein these substances polymerize anionically.

Claim 18. (previously presented) Combination according to claim 1, wherein coloured elements can be obtained by adding dyes or pigments to the building material and/or to the bath fluid.

Claim 19. (previously presented) Combination according to claim 1, wherein the density of the bath fluid amounts to about 0.95 to 1.15 times the density of the building material, so that self-supporting structures can be produced due to the buoyant force, which are not destroyed by the lowering the element below the surface of the fluid.

Claims 20 – 31. (cancelled)